

CLAIMS

1-17. (Cancelled)

18. (Previously presented) A method, comprising:

scanning a calibration chart a first time to obtain a first digital signal;

saving the first digital signal in a memory;

scanning the calibration chart a second time to obtain a second digital signal;

obtaining a first base value and a second base value from a base value bank;

adjusting the first and second digital signal by respectively employing the first and second base value to obtain a first and a second adjusted digital signal;

summing the first and second adjusted digital signal; and

replacing the saved first digital signal with the summed first and second adjusted digital signal.

19. (Previously presented) The method of claim 18, further comprising dividing a value of the summed first and second adjusted digital signal by a number of times that the calibration chart is scanned to produce an average value.

20. (Previously Presented) A method, comprising:

scanning a calibration chart a first time;

performing a first subtraction operation to subtract a base value from a value for a first pixel from the first scan of the calibration chart;

saving the result of the first subtraction operation in a calibration memory;

scanning the calibration chart a second time;

performing a second subtraction operation to subtract the base value from a value for the first pixel from the second scan of the calibration chart;

summing the results from the first and second subtraction operations; and
saving the results of said summing in the calibration memory, thereby replacing the result of the first subtraction operation.

21. (Previously Presented) The method of claim 20, further comprising dividing a value of the summed results by a number of times that the calibration chart is scanned to produce an average value.

22. (Previously Presented) The method of claim 20, further comprising range-checking the results of the first and second subtraction operations.

23. (Previously presented) An apparatus, comprising:
means for scanning a calibration chart a first time to obtain a first digital signal and a second time to obtain a second digital signal;
means for saving the first digital signal in a memory;
means for obtaining a first base value and a second base value from a base value bank;
means for respectively adjusting the first and second digital signal by respectively employing the first and second base value to obtain a first and a second adjusted digital signal;
means for summing the first and second adjusted digital signal; and
means for replacing the saved first digital signal with the summed first and second adjusted digital signal.

24. (Previously presented) The apparatus of claim 23, further comprising means for dividing a value of the summed first and second adjusted digital signal by the number of times that the calibration chart is scanned to produce an average value.

25. (Previously presented) An apparatus, comprising:

means for scanning a calibration chart a first time to obtain a first digital signal and a second time to obtain a second digital signal

means for performing a first subtraction operation to subtract a base value from a value for a first pixel from the first scan of the calibration chart and for performing a second subtraction operation to subtract the base value from a value for a first pixel from the second scan of the calibration chart;

calibration memory means for saving the result of the first subtraction operation;

means for summing the results from the first and second subtraction operations; and

means for replacing the result of the first subtraction operation in said calibration memory means with said results of said summing.

26. (Previously Presented) The apparatus of claim 24, further comprising means for dividing a value of the summed results by the number of times that the calibration chart is scanned to produce an average value.

27. (Previously Presented) The apparatus of claim 25, further comprising means for range-checking the results of the first and second subtraction operations.

28. (Currently Amended) The ~~method~~ apparatus of claim 25, further comprising means for replacing the saved result of the first subtraction operation with the summed results from the first and second subtraction operations.

29. (Previously presented) An apparatus, comprising:

a photo-sensor for converting into electrical signals light reflected from a first and second scan of a calibration chart;

an analog-digital conversion circuit for respectively converting the electrical signals from the first and second scan into a first and a second digital signal;

a memory capable of saving the first digital signal; and

a calibration operation circuit capable of:

obtaining a first base value and a second base value from a base value bank;

respectively adjusting the first and second digital signal by respectively employing the first and second base value to obtain a first and a second adjusted digital signal;

summing the first and second adjusted digital signal; and

causing the saved first digital signal to be replaced with the summed first and second adjusted digital signal.

30. (Previously presented) The apparatus of claim 29, wherein the calibration operation circuit comprises a divider circuit capable of dividing a value of the summed first and second adjusted digital signal by the number of times that the calibration chart is scanned to produce an average value.

31. (Previously presented) An apparatus, comprising:

a photo-sensor capable of scanning a calibration chart a first time and a second time;

a calibration operation circuit capable of performing a first subtraction operation to subtract a base value from a value for a first pixel from the first scan of the calibration chart and further capable of performing a second subtraction operation to subtract the base value from a value for a first pixel from the second scan of the calibration chart and further capable of summing the results from the first and second subtraction operations; and

a memory capable of storing the result of the first subtraction operation, and further capable of replacing the result of the first subtraction operation with the summed results from the first and second subtraction operations.

32. (Previously Presented) The apparatus of claim 31, further comprising a divider circuit capable of dividing a value of the summation of the results from the first and second subtraction operations by the number of times that the calibration chart is scanned to produce an average value.

33. (Previously Presented) The apparatus of claim 31, wherein the calibration operation circuit is further capable of range-checking the results of the first and second subtraction operations.

34. (Previously presented) The method of claim 18, wherein the calibration chart comprises a plurality of pixels.

35. (Previously presented) The method of claim 34, wherein the first and the second base values comprise pixel offset values for respective first and second pixels of the calibration chart.

36. (Previously presented) The method of claim 18, further comprising range-checking the results of the adjusting.

37. (Previously presented) The method of claim 20, wherein the first and the second base value comprise pixel offset values.

38. (Previously presented) The apparatus of claim 29, wherein the base value bank is embodied in the memory.

39. (Previously presented) The apparatus of claim 29, wherein the calibration circuit further comprises:

- a line DC circuit; and
- at least one operation circuit.

40. (Previously presented) The apparatus of claim 39, wherein the at least one operating circuit comprises at least one operating circuit selected from the group comprising: a difference circuit, a shift divider circuit, and a summation circuit.

41. (Previously presented) The apparatus of claim 29, wherein the memory comprises a plurality of memory banks.

42. (Previously presented) The apparatus of claim 41, wherein the plurality of memory banks comprise at least two memory banks selected from the group comprising: a base value memory bank, a difference memory bank, a summation memory bank and a calibration memory bank.

43. (Previously presented) The apparatus of claim 31, wherein the calibration circuit further comprises:

a line DC circuit; and

at least one operation circuit.

44. (Previously presented) The apparatus of claim 43, wherein the at least one operating circuit comprises at least one operating circuit selected from the group comprising: a difference circuit, a shift divider circuit, and a summation circuit.

45. (Previously presented) The apparatus of claim 31, wherein the memory comprises a plurality of memory banks.

46. (Previously presented) The apparatus of claim 45, wherein the plurality of memory banks comprise at least two memory banks selected from the group comprising: a

base value memory bank, a difference memory bank, a summation memory bank and a calibration memory bank.